



QUIZZES

Unit-6 (Chemical Bonding)



50 Questions



50 min

Topics

Unit-6 (Chemical Bonding)

Start Quiz

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49 : 58



1/50



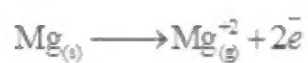
50 min



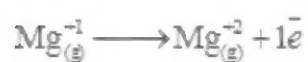
Hint

Q : Which of the following correctly represents the 2nd ionization energy of Mg

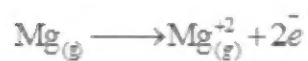
A



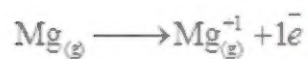
B



C



D



1

2

3

4

5

6

7

8

9

49 : 56



2/50



50 min



Hint

Q : General electronic configuration of p-block elements are given, Which of the following element has maximum first ionization energy



ns^2, np^2



ns^2, np^3



ns^2, np^4



ns^2, np^1

1

2

3

4

5

6

7

8

9

49 : 54



3/50



50 min



Hint

Q : The molecule which has strongest bond is



F-F



Cl-Cl



Br-Br



I-I

1

2

3

4

5

6

7

8

9

49 : 53



4/50



50 min



Hint

Q : In which of the following compound, all carbon atoms show sp^2 hybridization

A

Carbon dioxide

B

Propene

C

1, 3-Butadiene

D

Ethane nitrile

1

2

3

4

5

6

7

8

9

49 : 51



5/50



50 min



Hint

Q : Which of the following is most ionic in nature



Sodium chloride



Sodium fluoride



Sodium bromide



Sodium iodide

1

2

3

4

5

6

7

8

9

49 : 49



6/50



50 min



Hint

Q : The compound which has maximum electronic repulsions is

A



B



C



D



1

2

3

4

5

6

7

8

9

49 : 48



7/50



50 min



Hint

Q : Octet rule is followed by the central atom of _____ molecule



BF₃



SO₂



SF₆



CCl₄

1

2

3

4

5

6

7

8

9

49 : 45



8/50



50 min



Hint

Q : Benzene contains delocalized π -electronic cloud due to



sp^2 - sp^2 overlapping



s-p overlapping



sp^2 -s overlapping



$p_z - p_z$ overlapping

1

2

3

4

5

6

7

8

9

49 : 44



9/50



50 min



Hint

Q :

Some properties are given below. Which corresponds to PCl_3

- (i) sp^2 hybridization (ii) Polar (iii) Trigonal pyramidal
(iv) AB_3 type molecule

A

i, ii, and iii

B

ii, iii and iv

C

ii and iii

D

i, ii, iii and iv

1

2

3

4

5

6

7

8

9

49 : 41



13/50



58 min



Hint

Q : When bond order increases, then bond length becomes ____ and bond becomes ____



Shorter, stronger



Longer, weaker



Shorter, weaker



Longer, stronger



49 : 39



11:52



50 min



100%

Q : The pair of compounds having same geometry and hybridization



SO_3, NH_3



$\text{H}_2\text{S}, \text{H}_2\text{O}$



$\text{CdCl}_2, \text{PCl}_3$



$\text{SO}_2, \text{BeCl}_2$



49 : 37



12/30



50 min



12/30

Q : Possible bonds formed by overlapping of p-p orbitals is/are



σ -bond



Both σ and π



π -bond



None of these

8

9

10

11



13

14

15

16

49 : 36



13/50



50 min



100%

Q : % age of covalent bond in H_3O^+ is



33%



25%



75%



66%



49 : 35



14:50



50 min



100%

Q : Strength of bond depends upon the following factors except



E.N difference between bonded atoms



Sizes of the atoms



Bond length



Shielding effect



49 : 33



15:50



50 min



100%

Q : The distance between the nuclei of two atoms forming covalent bond is called



Covalent radius



Bond angle



Atomic radius



Bond length



49 : 32



13/50



50 min



Hint

Q : Which one of the following has minimum electron affinity value



O



Se



S



Te

8

9

10

11

12

13

14

15



49 : 29



12/10



50 min



10th

Q : Which among the following has net dipole moment



CH_4



BF_3



NH_3



CCl_4



49 : 28



18/50



50 min



12/10

Q : Which overlapping may not lead to sigma bond formation



p-p in fluorine



s-p in hydrogen fluoride



sp^2-sp^2 in benzene



p-p in ethene

15

16

17



19

20

21

22

23

49 : 26



19/50



50 min



Hint

Q : Which of the following molecule contains maximum number of lone pairs



Chlorine



Oxygen



Carbon dioxide



Hydrogen chloride

15

16

17

18



20

21

22

23

49 : 25



20/50



50 min



100%

Q : Correct statement when coordinate covalent bond is formed between NH_3 and BF_3



Ammonia is Lewis acid



Fluorine accepts lone pair due to its high electronegativity



Nitrogen of ammonia donates its lone pair to 2p orbital of Boron



Coordinate covalent bond is also called non-polar bond



49 : 24



21/50



50 min



100%

Q : Which one is AB_4 type molecule



SO_3



BF_3



SO_2



H_2S



49 : 22



21/50



50 min



100%

Q : According to VSEPR theory, which is angular in its structure



BF_3



SO_2



BeCl_2



NH_3



49 : 20



23/50



50 min



100%

Q : During formation of ammonium ion from ammonia and hydrogen ion, there is no change in hybridization (sp^3) but bond angle is changed from 107.5° in ammonia to almost _____ in ammonium ion



104.5°



120°



109.5°



92°



49 : 18



24/50



50 min



lang

Q :

In which of the following compound, central element is electron deficient



CH_4



BF_3



NH_3



SiCl_4



49 : 16



23/10



50 min



10th

Q : Which one of the following shows minimum bond angle



BF₃



NF₃



CH₄



H₂O



49 : 15



20/10



50 min



100%

Q : Which of following pair contains iso-structural species



CH_4 and CH_3



SO_4^{2-} and BF_4^-



NH_3 and BF_3



CO_2 and SO_2



49 : 13



21/100



50 min



100%

Q : Which of the following compounds is non-polar



CHCl_3



CO



SO_2



CO_2



49 : 11



28/50



50 min



100%

Q :

When the two partially filled atomic orbitals overlap in such a way that probability of finding the electron is maximum around the line joining the two nuclei, the result is the formation of



Pi bond



Sigma bond



Hydrogen bond



Metallic bond



49 : 07



24/10

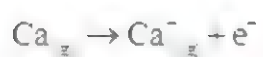
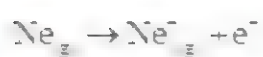
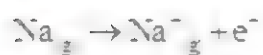


50 min



100%

Q : Which one of the following processes requires the highest amount of energy



49 : 05



30/50



50 min



lang

Q : The valence shell is



The highest energy level occupied by electrons



The set of orbitals used to make triple bonds



The orbitals belonging to the entire molecule



The lowest energy level occupied by electrons



49 : 04



31/50



50 min



100%

Q : CH_4 is a nonpolar molecule. Which of the following similar molecules is also non-polar



CH_3Cl



SiH_3Cl



CH_2Cl_2



SiH_4



49 : 02



32/50



50 min



lang

Q : The I.E. of nitrogen is more than that of oxygen due to the



The smallest size of nitrogen



The extra stability of the half-filled p orbitals



More penetrating effect



The greater attraction of electron by the nucleus



49 : 01



33/50



50 min



100%

Q : The elements of group _____ shows abnormal low values of electron affinity in every period of periodic table



IIIA and VIA



IIA, VA and VIIA



IIA and VIIIA



IIA, VA and VIIIA



48 : 59



34/50



50 min



Hint

Q : The incorrect statement among the following is



The first ionization energy of Al is less than the first I.E. of Mg



The second ionization energy of Mg is greater than the second I.E. of Na



The first ionization energy of Na is less than the first I.E. of Mg



The third I.E. of Mg is greater than that of Al



48 : 57



35/50



50 min



100%

Q : Which one of the following will have smallest radius?



A Al^{3+}



B Mg^{2+}



C Si^{4+}



D Na^{2+}



48 : 55



16/50



50 min



10/10

Q : Which one of the following molecules has the highest dipole moment



H_2S



H_2O



SO_2



CS_2



48 : 53



37/50



50 min



100%

Q : All the atoms are coplanar in the molecule_____



CH₄



PH₃



BF₃



NH₃

33

34

35

36



38

39

40

41

48 : 52



38/52



50 min



lang

Q : Bonding in phosphonium ion is _____ percent covalent



25



50



33



75

33

34

35

36

37



39

40

41

48 : 49



39/50



50 min



100%

Q : Formation of MgO is an example of



Ionic bond



Polar covalent bond



Non-polar Covalent bond



Double Covalent bond





40/150



50 min



10/10

Q : The bond between H-H is



A Stronger than the bond between C-C



B Weaker than the bond between C-C



C Neither stronger nor weaker than the bond between C-C



D Not comparable



48 : 46



40/50



50 min



100%

Q : Which hybrid orbitals are used for bonding in triangular pyramidal molecule



sp^2



dsp^2



sp



sp^3



48 : 44



12/50



50 min



12/50

Q : The hybridization state of 'S' in SO_3 is similar to that of



C in C_2H_2



C in CO_2



C in C_2H_6



C in C_2H_4



48 : 42



43/50



58 min



12/10

Q : Which of the following is NOT tetrahedral



48 : 41



44/55

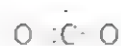
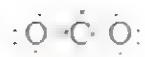


58 min



lang

Q : Which one is correct dot and cross diagram of CO_2



48 : 40



45/50



50 min



100%

Q : The electron affinity is the measure of the attraction of the nucleus of an atom for



Valance electron



Inner shell electron



Extra incoming electron



Last electron





48/53



50 min



List

Q : The ionization energies of an element are given below



The element X may belong to



IVA



IIIA



IIA



IA





47/50



50 min



100%

Q : In the resonance structure of benzene the number of s-bonds and p delocalized electrons are respectively



12 and 6



6 and 6



6 and 3



12 and 3



48 : 35



48:35



50 min



100%

Q : The hybridization associated with the central atom of a molecule in which all the bond angles are 120° is



sp



sp³



sp²



dsp³





40/55



50 min



100%

Q :

Choose the species that is incorrectly matched with the shape of the central atom

 CF_4 tetrahedral H_2O tetrahedral BeCl_2 linear NH_3 pyramidal

48 : 31



50/50



50 min



100%

Q : Correct order of H-N-H angle for the species NH_3 , NH_4^+ and NH_2^-



$\text{NH}_2^- > \text{NH}_4^+ > \text{NH}_3$



$\text{NH}_4^+ > \text{NH}_3 > \text{NH}_2^-$



$\text{NH}_3 > \text{NH}_4^+ > \text{NH}_2^-$



$\text{NH}_3 > \text{NH}_2^- > \text{NH}_4^+$





QUIZ RESULT

Unit-6 (Chemical Bonding)



5/11



5-JUN-2021



0/10



50 min



0 sec



0/10

Result Detail



Correct	0
Incorrect	10
Unattempted	0



Community

Q11756 {Osmium (2019-2020)}



Correct



Unattempted



Incorrect



1/50

Q : Which of the following correctly represents the 2nd ionization energy of Mg



← Q1158 (Chemistry subject)



Correct



Unthanked



Incorrect



2/100

Q : General electronic configuration of p-block elements are given, Which of the following element has maximum first ionization energy



ns^2, np^2



ns^2, np^3



ns^2, np^4



ns^2, np^1

04/12/21 (Overtime duration)



Correct



Unattempted



Incorrect



3/10

Q : The molecule which has strongest bond is



F-F



Cl-Cl



Br-Br



I-I

← QUIZ (Chemical structure)



Correct



Unthanked!



Incorrect



4/10

Q : In which of the following compound, all carbon atoms show sp^2 hybridization



Carbon dioxide



Propene



1,3-Butadiene



Ethane nitrile

04/12/2023 {Oman time (UTC+3)}



Correct



Unthanked!



non-act



5/50

Q : Which of the following is most ionic in nature



Sodium chloride



Sodium fluoride



Sodium bromide



Sodium iodide

Q1756 (Chemical Bonding)



Correct



Unattempted



Incorrect



Q 5/10

Q : The compound which has maximum electronic repulsions is



H_2O



NH_3



NH_4^+



CH_4

001120 {Chemistry (JEE)}
Correct



Correct



Incorrect



Incorrect



7/10

Q : Octet rule is followed by the central atom of _____ molecule



BF₃



SO₂



SF₆



CCl₄

Q1158 (Chemical structure)



Correct



Line item 1 of 1



Incorrect



9/10

Q : Benzene contains delocalized π -electronic cloud due to



A sp^2-sp^2 overlapping



B s-p overlapping



C sp^2-s overlapping



D $p_z - p_z$ overlapping

0011-00 {Chemistry (JEE Main)}



Correct



Incorrect



Incorrect



9/10

Q :

Some properties are given below. Which corresponds to PCl_3 ?

- (i) sp^2 hybridization (ii) Polar (iii) Trigonal pyramidal
(iv) AB_3 type molecule



i, ii, and iii



ii, iii and iv



ii and iii



i, ii, iii and iv

04/12/2023 {Osmosis (20/12/2023)}



Correct



Incorrect



Incorrect



10/10

Q : When bond order increases, then bond length becomes ____ and bond becomes ____



Shorter, stronger



Longer, weaker



Shorter, weaker



Longer, stronger

001198 {Chemistry (JEE Main)}



Correct



Unthanked!



non-act



1/50

Q : The pair of compounds having same geometry and hybridization



SO_3, NH_3



$\text{H}_2\text{S}, \text{H}_2\text{O}$



$\text{CdCl}_2, \text{PCl}_3$



$\text{SO}_2, \text{BeCl}_2$

00112-0 (Chemistry-2019-2020)



Correct



Unattempted



Incorrect



12/50

Q : Possible bonds formed by overlapping of p-p orbitals is/are



σ bond



Both σ and π



π -bond



None of these

Q1158 (Chemical Bonding)



Correct



Unthemed



Incorrect



13/50

Q : % age of covalent bond in H_3O^+ is



00112-0 {Chemistry (2012-2013)}



Correct



Unthemed



Incorrect



14/50

Q : Strength of bond depends upon the following factors except



A E.N difference between bonded atoms



B Sizes of the atoms



C Bond length



D Shielding effect

Q11718 {Chemistry>Structure}



Correct



Unthemed



Incorrect



10/50

Q : The distance between the nuclei of two atoms forming covalent bond is called



Covalent radius



Bond angle



Atomic radius



Bond length

04/12/2023 {Overtime duration}



Correct



Incorrect



Incorrect



Q/No

Q : Which one of the following has minimum electron affinity value



O



Se



S



Te

Q17158 (Chemistry subject)



Correct



Unattempted



Incorrect



17/12

Q : Which among the following has net dipole moment



CH_4



BF_3



NH_3



CCl_4

0011-0 (Chemistry) (2023)



Correct



Incorrect



Incorrect



18/02

Q : Which overlapping may not lead to sigma bond formation



p-p in fluorine



s-p in hydrogen fluoride



sp^2-sp^2 in benzene



p-p in ethene

Q112-8 {Osmosis (2012-2013)}



Correct



Unattempted



Incorrect



10/20

Q : Which of the following molecule contains maximum number of lone pairs



Chlorine



Oxygen



Carbon dioxide



Hydrogen chloride

Q1156 (attempt 2/2)



Correct



Unattempted



Incorrect



20/50

Q : Correct statement when coordinate covalent bond is formed between NH_3 and BF_3



Ammonia is Lewis acid



Fluorine accepts lone pair due to its high electronegativity



Nitrogen of ammonia donates its lone pair to 2p orbital of Boron



Coordinate covalent bond is also called non-polar bond

001123 (Chemistry 2012-2013)



Correct



Unthemed



Incorrect



21/50

Q : Which one is AB_4 type molecule



SO_3



BF_3



SO_2



H_2S

0017-00 {Chemistry (JEE Main)}



Correct



Unattempted



Non-answered



22/50

Q : According to VSEPR theory, which is angular in its structure



BF_3



SO_2



BeCl_2



NH_3

001198 {Chemistry (JEE Main)}



Correct



Unattempted



Incorrect



23/70

Q : During formation of ammonium ion from ammonia and hydrogen ion, there is no change in hybridization (sp^3) but bond angle is changed from 107.5° in ammonia to almost _____ in ammonium ion



104.5°



120°



109.5°



92°

Q1158 (Chemistry) (2022)



Correct



Unattempted



Incorrect



24/50

Q :

In which of the following compound, central element is electron deficient



CH_4



BF_3



NH_3



SiCl_4

04/12/2023 {Overtime duration}



Correct



Unattempted



Incorrect



25/50

Q : Which one of the following shows minimum bond angle



BF_3



NF_3



CH_4



H_2O

QUIZ (Chemical Bonding)



Correct



Unattempted



Incorrect



26/50

Q : Which of following pair contains iso-structural species



CH_4 and CH_3



SO_3^{2-} and BF_3



NH_3 , BF_3



CO_2 and SO_2

← QUIZ (Chemical Bonding)



Correct



Unattempted



Incorrect



27/50

Q : Which of the following compounds is non-polar



CHCl₃



CO



SO₂



CO₂

0011-00 (Chemistry) (2022-23)



Correct



Line formed



Incorrect



21/50

Q :

When the two partially filled atomic orbitals overlap in such a way that probability of finding the electron is maximum around the line joining the two nuclei, the result is the formation of



Pi bond



Sigma bond



Hydrogen bond



Metallic bond

04/12/2023 (Oman time 04:23:23)



Correct



Unattempted

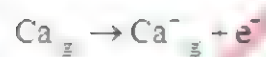
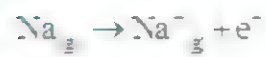


Incorrect



21/50

Q : Which one of the following processes requires the highest amount of energy



← QUIZ (Chemical bonding)



Correct



Unattempted



Incorrect



30/30

Q : The valence shell is



The highest energy level occupied by electrons



The set of orbitals used to make triple bonds



The orbitals belonging to the entire molecule



The lowest energy level occupied by electrons

← QUIZ (Chemistry) (2022)



Correct



Unthanked



Incorrect



31/50

Q : CH_4 is a nonpolar molecule. Which of the following similar molecules is also non-polar



CH_3Cl



SiH_3Cl



CH_2Cl_2



SiH_4

← QUIZ (Completed)



Correct



Unattempted



Incorrect



32/50

Q : The I.E. of nitrogen is more than that of oxygen due to the



The smallest size of nitrogen



The extra stability of the half-filled p orbitals



More penetrating effect



The greater attraction of electron by the nucleus

0011234 {Chemistry (JEE Main)}



Correct



Unattempted



Incorrect



32/50

Q : The elements of group _____ shows abnormal low values of electron affinity in every period of periodic table



IIIA and VIA



IIA, VA and VIIA



IIA and VIIIA



IIA, VA and VIIIA

0011210 {Chemistry 2011210}



Correct



Unthemed



Incorrect



34/50

Q : The incorrect statement among the following is



A The first ionization energy of Al is less than the first I.E. of Mg



B The second ionization energy of Mg is greater than the second I.E. of Na



C The first ionization energy of Na is less than the first I.E. of Mg



D The third I.E. of Mg is greater than that of Al

← QUIZ (Chemistry)



Correct



Unattempted



Incorrect



11/10

Q : Which one of the following will have smallest radius?



Al^{3+}



Mg^{2+}



Si^{4+}



Na^{2+}

04/12/2023 (Oman time 10:22:52)



Correct



Attempted



Incorrect



34/50

Q : Which one of the following molecules has the highest dipole moment



H_2S



H_2O



SO_2



CS_2

← QUIZ (Completed)



Correct



Unattempted



Incorrect



37/50

Q : All the atoms are coplanar in the molecule_____



CH₄



PH₃



BF₃



NH₃

001198 {Chemistry (JEE Main)}



Correct



Unattempted



Incorrect



31/40

Q : Bonding in phosphonium ion is _____ percent covalent



25



50



33



75

← QUIZ (Chemical Bonding)



Correct



Unattempted



Incorrect



37/50

Q : Formation of MgO is an example of



Ionic bond



Polar covalent bond



Non-polar Covalent bond



Double Covalent bond

← QUIZ (Chemical Bonding)



Correct



Unattempted



Incorrect



40/50

Q : The bond between H-H is



Stronger than the bond between C-C



Weaker than the bond between C-C



Neither stronger nor weaker than the bond between C-C



Not comparable

00112-0 (Chemistry-2012-2013)



Correct



Unthemed



Incorrect



41/50

Q : Which hybrid orbitals are used for bonding in triangular pyramidal molecule



sp^2



dsp^2



sp



sp^3

00119-8 {Osmosis (2019-2020)}



Correct



Unattempted



Incorrect



42/50

Q : The hybridization state of 'S' in SO_3 is similar to that of



C in C_2H_2



C in CO_2



C in C_2H_6



C in C_2H_4

QUIZ (Chemistry)



Correct



Unattempted



Incorrect



43/100

Q : Which of the following is NOT tetrahedral



Q1158 (Chemical Diagrams)



Correct



Unthemed!



Incorrect



44/100

Q : Which one is correct dot and cross diagram of CO_2



Q117-8 {Osmosis-2022}



Correct



Unthemed



Incorrect



45/50

Q : The electron affinity is the measure of the attraction of the nucleus of an atom for



Valance electron



Inner shell electron



Extra incoming electron



Last electron

Q1158 (Chemistry) (2022)



Correct



Unattempted



Incorrect



46/50

Q : The ionization energies of an element are given below



The element X may belong to



IVA



IIIA



IIA



IA



Unit-6 (Chemical Bonding)



Correct



Unattempted



Incorrect



47/50

Q : In the resonance structure of benzene the number of s-bonds and p delocalized electrons are respectively

A

12 and 6

B

6 and 6

C

6 and 3

D

12 and 3



Unit-6 (Chemical Bonding)



Correct



Unattempted



Incorrect



48/50

Q : The hybridization associated with the central atom of a molecule in which all the bond angles are 120° is

A

sp

B

sp³

C

sp²

D

dsp³



Unit-6 (Chemical Bonding)



Correct



Unattempted



Incorrect



49/50

Q :

Choose the species that is incorrectly matched with the shape of the central atom

A

CF_4 tetrahedral

B

H_2O tetrahedral

C

BeCl_2 linear

D

NH_3 pyramidal



Unit-6 (Chemical Bonding)



Correct



Unattempted



Incorrect



50/50

Q : Correct order of H-N-H angle for the species NH_3 , NH_4^+ and NH_2^-

A



B



C



D

